# THE IMPLEMENTATION OF COMMUNITY-BAS ED MANGROVE CONSERVATION PROGRAM IN THE PHILIPPINES: ITS NARRATIVES OF SUSTAINABILITY AND BEST PRACTICES

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ABSTRACT: Mangrove forests have been very effective for climate change mitigation and coastal conservation. Thus, local government units in the Philippines ventured into mangrove conservation as a component of coastal resource development programs. On the other hand, mangrove conservation is also very important in eco-community tourism programs. Which can be a source of local government revenue generation. The study used a mixed method with the key informants. The following are the findings of the study, there is a strong collaboration of the people's organizations, the private sector, non-government organizations, and LGU of Bayabas in the implementation of the vision, mission, & objectives of the mangrove conservation. The women's sector is actively involved in the conservation measures, so with youth and senior citizens. The DENR, BFAR, and PFAR actively supported the mangrove conservation programs. The "Gakit" festival is the cultural and tourism component of mangrove conservation, it is the festivity in celebration of the harvest from the sea, from the farm and illustrates the success of mangrove conservation. The LGU of Bayabaasanchored on the implementation of a mangrove conservation program to promote food security, people's empowerment, cultural and tourism promotion, sustainability on the use of natural resources, empowered communities, and best environmental governance. Among the challenges encountered are: There is a minimal number of foreign tourists in the mangrove conservation sites, there is a need to add the livelihood project to the fishers to increase their income, and there is a need to increase the livelihood assistance to small-scale fisher entrepreneurs. A study on the cultural component of mangrove conservation and women's involvement in conservations be undertaken in the future.

Keywords: Mangrove, Conservation, Peoples, Participation, Bayabas

#### 1. INTRODUCTION:

Juario and Ontoy [1] who conducted a study on the reassessment of the mangrove forest in Ormoc Bay, Philippines narrated that: The mangrove forest is highly utilized by the local communities. People gather different mangrove species and a variety of edible invertebrates both for household consumption and for economic gains by selling them to the market. The resource, however, is seriously threatened by human-induced stresses, such as overexploitation, conversion of mangrove areas to fishponds, and soil erosion due to denuded forest cover in the uplands [2].

Tan [3] study on the Socio-Economic Assessment and Environmental Practices of Magrove Area Settlers in Davao Gulf narrated that environmental studies have log documented the effect of population characteristics, dynamics, and development on the quality and state of the mangrove system. Depleted mangroves may affect people's decisions to stay in the area and the kind of economic prospects and activities they may engage in. A well-sustained mangrove system, on the other hand, may perpetuate the existence of the communities around the mangrove [4].

Tomaquin [5] discussed that the surging climate change brought about by global warming made the local government units in the Philippines responsible for climate change initiatives and programs [6]. The various local governments engaged and formulated different environmental governance programs such as fish sanctuary management, freshwater conservation programs, conservation, and coastal management strategies to name a few.

The municipality of Bayabas is a coastal municipality of the Philippines. It has an active and robust mangrove conservation program called "Sagip Wakatan". It is a comprehensive mangrove conservation that involves active people's organizations, the private sector, and sectoral participation such as women, youth, and others. It is anchored on sustainability, the food sector, and people's involvement. It is a community-based program centered on the philosophy of partnership between and among the LGUs, POs, NGOs, NGAs, and other stakeholders [7]. The mangrove conservation program was based on the empowerment of People's

Organizations, and people's participation with the end view of sustainability of coastal resources.

Doria, Tangonan, and Ruadap [8] write the meaning of sustainability as according to the Environmental Protection Agency (EPA-USA), sustainability is a priority interest for numerous organizations and this is a guiding influence for all environmentalist work [9].

Tomaquin [10] discussed that mangrove rehabilitation is an integral part of the coastal resource management programs by the local government units' biodiversity importance, deterrence in disasters such as floods, and eco-tourism importance. Tomaquin [11] further writes that mangrove forests are areas for the perpetuation of various species of fish,

safeguarding siltation and soil erosion in addition also of their aesthetic and educational value. The LGUs are empowered by the Local Government Code of 1991 to develop the mangrove forest with the end view of sustainable development. The importance of mangrove forests for environmental governance, tourism, and scientific & cultural value illustrated the importance of sustainable use of resources. "SakipWakatan", the mangrove conservation program of LGU Bayabas is a community-based program that incorporates reforestation, preservation of mangrove species, value its aesthetic value, and value its eco-tourism importance. It further aims to mitigate the effects of climate change because the mangrove forest protects or serves as a buffer against the ill effects of typhoons and soil erosion.

Quevedo and Salinas [12] write that mangroves are trees that grow and develop in the coastal zones of coastal communities. They cater to many importance of both marine and terrestrial dwelling animals and most to the greater number of consuming organisms and to the higher being, the humans. Mangrove forests are among the richest ecosystems found along the coastal areas in terms of natural resource availability. These offer many benefits both in ecological and economic aspects. Ecologically, these serve as a buffer zone to the coastal areas, protect the residents from the typhoon and big waves, serve as pollution sinks, minimize or prevent soil erosion, and feeding and nursery domains to many marine vertebrates and invertebrates and nesting ground to terrestrial animals [13].

In related study conducted by Malong on the governance of the Marine Protected Area (MPA) of Cortes, Surigao del Sur revealed the findings: That fishers' respondents availed the training of Marine Protected Area governance from NGOs, LGU, BFAR, PFAR, NGP of DENR for mangrove conservation. Further Malong [14] concluded that it illustrated the strong collaboration of the mentioned agencies in training the fisher in mangrove conservation. Further, mangrove conservation aims to promote food security, harness community involvement, and mitigate climate change at the village level [15].

## 2. RESEARCH OBJECTIVES:

The study presents a narration of the following research aims:

- a. A presentation of the best practices of LGU Bayabas Mangrove Conservation Program;
- Present on the challenges encountered in the said mangrove conservation program;
- Narrate the extent of support of the following agencies in the mangrove conservation BLGU, MLGU, BFAR, PFAR, and DILG;
- d. Construct or narrate the different participatory approaches in mangrove conservation;
- e. Determine the attitude of the fishers on the mangrove conservation;
- f. Determine the extent of implementation of the mangrove conservation;

### 3. THEORETICAL FRAMEWORK:

Babbie [16] writes Garfinkel [17] suggests that people are continuously trying to make sense of the life they experience. In some way he suggests that everyone is acting like a social scientist: hence, the term ethnomethodology or methodology of the people. Babbie [18] further discussed that while some social scientific paradigms emphasize the impact of social structure such as norms, values, and control agents on human behavior, other paradigms do not. Harold Garfinkel [19] a contemporary sociologist, takes the point of view that people are continually creating social structure through their active and interactions that they are, in fact creating their realities [20].

Another Theory this research reviewed is the Micro-theory. Babbie [21] discussed that micro-theory deals with the issues of social life at the level of individuals and small groups. Such studies often come close to the realm of psychology typically focusing on what goes on inside humans, social scientists study what goes on among them [22].

## 4. MATERIALS AND METHOD:

The research used the Descriptive-Mixed method. Cornell, Mendoza, and Bolotaolo [23] describe this type of research method involves describing in detail specific situations using research tools like interviews, surveys, and observations. Castillo and Caluntad [24] discussed that the principal aims of employing descriptive methods are to describe the nature of situations as they exist at the time of the study and to explore the causes of particular phenomena. Further, the study used the phenomenological method. It further used a narrative inquiry strategy focusing on lived experiences [25]. The other supplemental strategies were employed namely: Observation method. Cornell, Mendoza, and Bolotaolo [26] write that there are two main categories of the observational methodnaturalistic and laboratory observation. The biggest advantage of the naturalistic method of research is that researchers view participants in their natural environments. The study also used the case study method. Cornell, Mendoza, and Bolotaolo [27] write that case study method research involves an in-depth study of an individual or group of individuals. The study also used the strategy of participatory action research. Hunt, Socorio, Quisumbing, and Green [28] discussed that researchers may initially employ some form of participant observation to gain greater insight site the thoughts and actions of the study population. It also requires the existence of certain necessary preconditions, such as the basic level of community [29].

The study also employed the qualitative method. Matira and Edaño [30] discussed that the qualitative method draws on an inductive process in which themes and categories emerge through an analysis of data collected by such techniques as interviews, observations, videotapes, and case studies of the sample are usually small and often purposively selected [31].

The study also used the strategy of participatory research. Panopio, Cordero-MacDonald, and Raymundo [32] discussed that this method utilizes the people who are actual targets of the development process in the process. The program is presented to the people themselves and so the research is done in the context of the people-centered development.

The study also employed observation and interview methods. Panopio, Cordero-MacDonald, and Raymundo discussed that observation may be non-participant observation, the researcher enters the situation as a third party as he or she observes and records what is being studied. In the participant observation, the researcher takes part as a member of the group being studied [33].

The research environment is the Municipality of Bayabas, Province Surigao del Sur, Philippines. It is a municipality facing the Pacific Sea Board. It has the following Barangays: Panaosawon, Magobawok, La Paz, Cagbaoto, Cabugo, Balite, and Amag.

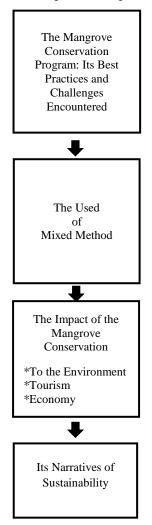


Figure 1. Schematic Diagram of the Research Framework

## 5. RESULTS AND DISCUSSIONS:

Table 1. Best Practices of Mangrove Conservation and Its

Challenges Encountered				
Best Practices	Challenges Encountered	Proposed Solution		
The Program is Adequately Staff	There is a need to hire more permanent/plantilla positions for the mangrove conservation program	Hire additional permanent/plantilla position for the Mangrove Conservation Program		
Facilities are provided such as speed boats, pump boats, binoculars, emergency lights, etc.	Need for more trained operators of Speed Boat	Hire more additional speed boat operator		
Robust integration of eco-tourism programs	Minimal number of foreign tourists	More promotion of the mangrove conservation program using social media		
It promoted the growth of employment & encouraged avenues for more restaurants, coffee shops, and cafeterias (eateries) near the mangrove conservation area	There are only a few restaurants, coffee shops, and a cafeteria (eatery) near the mangrove conservation area	Encourage more investors for the restaurants, coffee shop, and cafeteria (eatery)		
The Mangrove Conservation Programs ensures the protection of the environment particularly the mangrove and similar species, communal tidal forest, and inland fishery reserve	Need for more NGO involvement in mangrove conservation	There is a need for more collaboration among NGOs, with advocacy for more training in capacity building in mangrove conservation intended for the fishers.		
A very robust existing council committee established for monitoring inspection, and enforcement to protect the mangrove forest	There is a need to increase the livelihood component of the mangrove conservation	Intensify the integration of the livelihood component of the mangrove conservation		
Empowered the communities through capacity building training, seminars, "lakbay-aral" or the like was availed	There is a need for more livelihood intervention training. This can augment the income of the fisher folk.	Conducting more livelihood interventions for the fishing community to increase their income and make them more self-reliant and productive.		
Rehabilitated the mangrove was successfully done	There is a need for more intensive private sector involvement in mangrove conservation	Having the corporate sector sponsor more tree-planting activities is recommended.		
The mangrove conservation programs were able to intensify information and education (IEC) on the important principles of mangrove conservation protection, development, and management	There is a need to increase the fund allocation of the mangrove conservation program	Entering into a joint venture with the corporate sector for more enhanced funding in mangrove conservation		

Table 1 illustrates the best practices and challenges of the Mangrove Conservation Program. It also presented the proposed solution to the challenges encountered.

It can be deduced from Table 1 that the Best Practices of the Bayabas Mangrove Conservation Program are due to the active involvement of the fisherfolk, robust funding from the LGU, and active assistance from NGP of DENR, BFAR, and PFAR. The challenges encountered do not affect its operation or management for it is very much excellently implemented.

Table 2.The Distribution of the Extent of Partnership of the following government agencies/organizations as perceived by the fishers on the Mangrove Conservation Program:

Name of Agency/ Organization	Bale te	Ca Bugo	La Paz	Mo Gaba wok	Mean	Description
Municipality Local Government Unit	4.22	4.23	4.23	4.24	4.23	Excellently Implemented
Barangay Local Government Unit	4.24	4.25	4.26	4.26	4.25	Excellently Implemented
BFAR	4.25	4.24	4.26	4.27	4.26	Excellently Implemented
PFAR	4.22	4.23	4.23	4.25	4.23	Excellently Implemented
NGP of DENR	4.25	4.25	4.26	4.26	4.25	Excellently Implemented
Overall Mean 4.2				4.24	Excellently Implemented	

Table 2 illustrates the extent of the partnership between the fishers folks & the following agencies: MLGU, BLGU, BFAR, PFAR, and NGP of DENR. Further, the table revealed the excellent partnership of the said agencies and the fishers which resulted in a very effective management of the Mangrove Conservation.

Table 3. Distribution of the Different Participatory Approaches in Mangrove Conservation and its

Rest Practices

Best Practices			
The Different Participatory Approaches Used	Best Practices		
Community Initiatives are taken into account.	The community is widely informed of their recommendation through the Barangay Assembly and Urgent Meeting.		
Private Sector Involvement	There is an active collaboration of BLGU, MLGU, and Partner NGOs on the Mangrove Conservation Program.		
Capacity/Capability Building of People's Organization	There is a robust capacity/ capability enhancement program in Mangrove Conservation.		
Active Participation in the Planning of the activities of Mangrove Conservation.	The villages/communities are actively involved in the planning of different programs for the Mangrove Conservation.		
Involvement of the community in decision-making	The community is actively involved in decision-making by the Barangay Assembly.		
Implementation of	The community is actively		

community-based tree	involved in community tree
planting	planting.
Penalize cutting of Mangroves and similar species	The "Sagip Wakatan" ordinance penalized the cutting of Mangroves and similar species.
Use of Billboard & tarpaulin in the promotion of Mangrove Conservation	The use of billboards & and tarpaulin besides social media, had been instituted in promoting the best practices of mangrove conservation.
Volunteer work in Mangrove Conservation was robustly instituted	Active voluntarism had been instituted to promote the best practices of mangrove conservation.

Table 3 reveals the different participatory approaches in the mangrove conservation program. It illustrated that the said participatory approaches contributed to the excellent management of the mangrove conservation program. The best practices further, illustrated of its success story.

Table 4. Distribution of Mangrove Conservation Program Implementation

Indicators/Aspects of Mangrove Conservation	Mean	Description
Participative Environmental Governance	4.44	Excellently
		Implemented
NGO and Private Sector	4.33	Excellently
Involvement		Implemented
Mangrove Conservation	4.55	Excellently
promotion	4.55	Implemented
Implementation of Vision	4.40	Excellently
and Objectives	4.40	Implemented
BFAR, PFAR, and DENR	4.44	Excellently
Involvement and Assistance		Implemented
Employment support/		Excellently
livelihood assistance to the	4.39	Implemented
fishers		
Funding	4.24	Excellently
Funding	4.24	Implemented
Monitoring	4.49	Excellently
Monitoring	4.49	Implemented
Overall Mean	4.41	Excellently
Overali Mean	4.41	Implemented

Table 4 revealed the implementation of the Mangrove Conservation Program. It illustrated that it has an overall mean of 4.41 in all aspects or indicators with the overall description of Excellently Implemented.

Table 5.Distribution of the Attitudes of the Fisher concerning Mangrove Conservation

Attitudes	Mean	Description
I actively participated in the	4.23	Strongly
mangrove conservation program	4.23	Agree
I actively participated in the information on the relevance of mangrove conservation	4.24	Strongly Agree
I actively cooperate as a member of the People's Organization which actively involved in mangrove conservation	4.26	Strongly Agree
I piously followed the "Sagip	4.27	Strongly

Wakatan" Ordinance		Agree
I was piously involved in the "Gakit" Festival	4.21	Strongly Agree
I encourage my relatives to be involved in the mangrove conservation program	4.21	Strongly Agree
Discuss the challenges encountered in the mangrove conservation program	4.22	Strongly Agree
Overall Mean		4.23
Grand Descriptive Equivalent	Strongly Agree	

Table 5 revealed the distribution of the fishers' attitudes concerning mangrove conservation. It has an overall mean of 4.23 with the general description of strongly agree.

Table 6.Challenges Encountered in the Mangrove Conservation
Program and Proposed Solution

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Challenges	Proposed Solution		
Lack of Foreign Tourist	Encourage foreign tourists to visit the mangrove reserve by enhancing promotion using social media.		
Add more livelihood projects to fishers	Engaged more cooperation with DTI, and DOLE to increase livelihood assistance.		
Add more patrol boats to enhance the patrol of the mangrove conservation sites	Increase the number of patrol boats and actively train the fish warden (Bantay Dagat) in the context of the Fishery Code of the Philippines		
Need of more business establishments near conservation sites	There is a need to add business establishments near the mangrove conservation site such eatery and coffee shops for the tourist.		
Increase the honorarium of the "Bantay Dagat" (Fish Warden)	There is a need to increase the honorarium of the "Bantay Dagat" (Fish Warden. To increase their income.		

Table 6 revealed the challenges encountered in the mangrove conservation implementation and its proposed solution. Among the challenges were: the lack of foreign tourists, adding more livelihood projects to the fishers, adding more patrol boats in patrolling the mangrove conservation site, the need for more business establishments near the mangrove conservation sites, and increase the honorarium of the "Bantay Dagat" (Fish Warden). It can be deduced further that the proposed solutions offered can greatly help address the challenges encountered besides it is workable or feasible.

### 6. CONCLUSIONS AND RECOMMENDATIONS

The following are the best practices in the mangrove conservation project: The program is adequately staff, facilities are provided such as speed boats, pump boats, binoculars, emergency lights, etc., robust integration of eco-tourism programs, it promoted the growth of employment and encourage more avenues for more restaurants, coffee shop, and carenderia (eatery) near the mangrove conservation area, the mangrove conservation program ensures the protection of the environment, particularly the mangrove and similar species, communal tidal forest and inland, fishery reserve is protected, a very robust existing council committee for monitoring inspection and enforcement, to protect the mangrove forest instituted, empowered the communities through capacity building training, seminar, "Lakbay Aral" or the like was availed, rehabilitated the mangroves

was successfully done, the mangrove conservation programs were able to intensify information and education (IEC) or the important principles of mangrove conservation protection, development and management.

The challenges encountered were: There is a need to hire more permanent plantilla positions for the mangrove conservation program, need for more trained operators of the speed boat for patrolling the reserve, there is a minimal number of foreign tourists, there are few restaurants, coffee shop, carenderia (eatery) near the mangrove conservation area, need of more NGO involvement in mangrove conservation, there is a need to increase the livelihood component of the mangrove conservation. This can augment the income of the fisherfolk. There is a need for more intensive private sector involvement in mangrove conservation, there is a need to increase the fund allocation of the mangrove conservation program. The extent of a partnership of the Municipal Government of Bayabas, Barangay Local Government Unit, to the BFAR, PFAR & NGP of DENR is excellently implemented. The following participatory approaches were employed by the Mangrove Conservation implementors: community initiatives are taken into account, NGO collaboration and private sector involvement were strong or robust provided capacity/capability of the people's organization, active participation in the planning of the activities of the mangrove conservation, involvement of the community in decision-making, implementation of the community-based tree planting, penalize the cutting of mangroves and similar species, use of billboard and tarpaulin in the promotion of mangrove conservation was highly noted, volunteer work in mangrove conservation was robustly instituted.

The following aspects/indicators in mangrove conservation were excellently implemented: participative environmental governance, NGO and private sector involvement, mangrove conservation promotion, implementation of vision and objectives, BFAR, PFAR, and NGP of DENR active involvement and assistance, employment support/livelihood assistance to the fishers was provided. The fishers have very good attitudes concerning the goals of mangrove conservation. Among the challenges encountered are the lack of foreign tourists, adding more livelihood projects to the fishers, adding more patrol boats to enhance the patrol in the reserve, the need for more business establishments near conservation sites, increase the honorarium of the "Bantay Dagat" (Fish Warden).

The following are the recommendations: there is a need to add livelihood projects to the fishers to increase their income, there is a need to increase the livelihood assistance to small-scale fisher entrepreneurs.

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